

Living Shorelines

a natural solution



Shoreline Restoration, Blackbird Creek Reserve

Background

A “Living Shoreline” is a method of bank stabilization that reinforces the shoreline to protect coastal properties from erosion, while also restoring and enhancing fish, wildlife water quality and wetland habitat.

Unlike bulkheads and stone rip rap, Living Shorelines use natural materials to maintain existing connections between the shoreline and aquatic areas. A number of Living Shoreline materials and tactics are available, including coconut fiber coir logs, natural fiber matting, recycled shell, and native wetland vegetation.

Living Shorelines have been built throughout Delaware’s coastal regions and are a popular option for bank stabilization because they protect property from erosion while attracting fish and shellfish, filtering polluted runoff, and absorbing wave energy during storms.

Blackbird Creek Approach

This Living Shoreline design addressed an erosion and habitat loss issue occurring on either side of the kayak ramp. The project began in early May 2015 through the installation of a series of coir logs, mats, sand, topsoil and wooden stakes along the bank. The coir logs were placed on mats, and then secured into the mud with stakes to keep the logs from moving.

The west side location already contained the native wetland plant, arrow arum, but the east side location was empty so clean sand was trucked in and topped with a little soil to create a nice high base.

Once the mats, logs and sand were in place, a few weeks passed by to allow things to settle. In June of 2015, a variety of native plants (arrow arum, smooth cordgrass, pickerelweed, saltmarsh bulrush, yellow sneezeweed, swamp rose, marsh hibiscus, New York ironweed and pin oak) were planted in the cells. Once these plants fully grow, they will help further trap sediments, stabilize the bank and completely cover the coir log structures.

The site is regularly monitored to track progress. Living Shorelines may need augmentation over time. However, successful projects throughout the Mid-Atlantic have survived multiple hurricanes!

Example: Completed shoreline project at the Lewes Ball Field Site in Lewes, Delaware

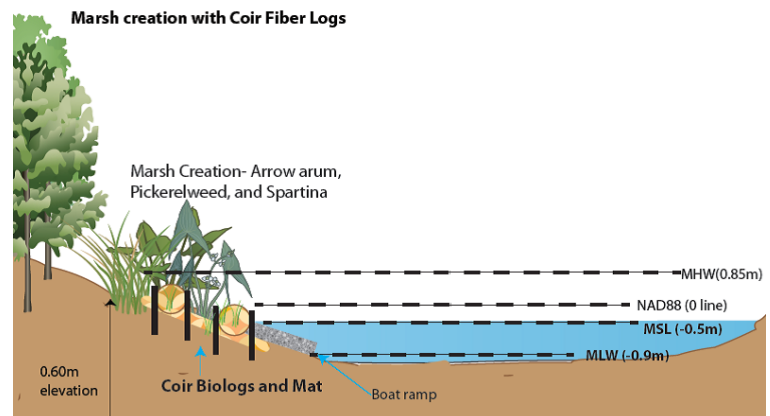


April 2014
Coir materials installed, but prior to planting

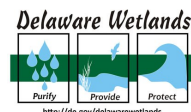


August 2015
16 months later, plants established

Conceptual Plan



Collaborative Partners



Wetland Monitoring & Assessment Program

Division of Watershed Stewardship

302-739-9939

<http://de.gov/delawarewetlands>



Delaware National Estuarine Research Reserve

302-739-6377

<http://de.gov/dnerr>



Delaware Division of Fish & Wildlife

302-739-9912

<http://www.dnrec.delaware.gov/fw/Pages/DFW-Portal.aspx>

Costs

To the right is a comprehensive list of materials and their associated costs for the 160 linear foot Living Shoreline site at Blackbird Creek. Like all shoreline restoration projects, costs can vary greatly depending on the extent of the project, whether sand fill is needed, and if additional structures are installed to diminish stronger wave energy. Please note, the costs listed do not include expenses related to labor, surveys, field studies, modeling, design, permitting or special equipment.

Cost-Share Program: To aid landowners installing Living Shorelines on their property, the Sussex Conservation District and DNREC may provide cost-share assistance. Cost-share is paid at 50% of the actual project cost, up to \$5,000 for projects anywhere in DE. For additional information: <http://www.sussexconservation.org/programs/cost-share-program>.

ITEM	PRICE	NOTES	Quantity	Cost	per ft
Coir Log 12"	\$76.36	12' x 12" log	5 logs	\$396.80	\$6.36
Coir Log 20"	\$201.50	12'x20" log	18 logs	\$3,627.00	\$16.79
Coir Mat	\$214.20	33 linear ft	2 roll	\$428.40	\$6.49
Twine	\$40.00	2 rolls	2 roll	\$80.00	\$0.50
Sand	varies	160 linear ft		\$1,200	\$7.50
48" stakes	\$1.98	2" x 2" x 48"	120 stakes	\$226.80	\$0.50
60" stakes	\$2.19	2" x 2" x 60"	135 stakes	\$295.65	\$0.44
Plants	varies	9 plant species	800	\$1,101.36	\$6.88
TOTAL=				\$7,356.01	\$45.46

Permitting

Authorization under the Statewide Activity Approval (SAA) for Shoreline Stabilization Projects is available for Living Shorelines in Delaware. For projects under 500 linear feet using native marsh vegetation this expedited permitting process allows permits to be issued sooner than standard permits. The U.S. Army Corps Nationwide Permit No. 27 for "Aquatic Habitat Restoration" federal permit was also required with the Blackbird Living Shoreline project. Permitting information can be found at: <http://de.gov/wetlandpermits>.

*Want more
information?*



DELAWARE
LIVING
SHORELINE
COMMITTEE

Contact the Delaware Living Shoreline Committee

What: The Delaware Living Shoreline Committee is a voluntary group of state, private and non-profit professionals coordinating research, education, funding and opportunities for Living Shoreline projects in Delaware

When: The committee meets quarterly

Contact: For general questions about Living Shorelines or to take part in the meetings please call Danielle Kreeger at 302-655-4990 or Alison Rogerson at 302-739-9939

<http://de.gov/livingshorelinesites>

Project Photos

Pre-installation winter 2014, kayak ramp in center



Pre-installation winter 2014, west and east sides



Installation phase 1 spring 2015, west and east sides



Summer 2015, west and east sides

